

Windows-Breaking Emergency Escape Device

Background of the Invention

(a). Field of the Invention

5 The invention is related to a windows-breaking emergency escape device, more specifically, to a windows-breaking emergency escape device that has a supplementary power apparatus and a safety cutter.

(b). Description of the Prior Arts

10 Conventionally, safety device installed in a car for protecting passengers from being injured in an emergency situation include air bag, ABS and TCS etc. However, another device draw more and more attention in such safety issue recently, which is the windows-breaking emergency escape device. A windows-breaking emergency escape device is considered to be used in a emergency situation, such as a car falling into water or a car caught in the
15 fire. In such situations, the passengers in the car need to break the car windows immediately to escape from the car in a short and critical time.

 According to statistic, there are many people killed in a car accident, such as that the car falling into water or being caught in a fire, in such situation, it is very difficult for the passengers in the car to escape from the
20 car in a very short time, and eventually the passengers got killed. Therefore, the windows-breaking emergency escape device provides an excellent option to help people from being killed in such emergency situation with a cost-saving and effective solution.

 Now referring to FIG. 1, which is showing a conventional
25 windows-breaking emergency escape device. As shown, the conventional windows-breaking emergency escape device comprises a main body A made of metal material, the main body A includes a handler B for user to hold the device, the front end of the main body A has a cone-shaped hammer head C and a cutter D. When the accident happened, the user can hold the main
30 body A of the device with the handler B and hit the car window with cone-shaped hammer head C to break the car windows to escape from the car, and the cutter is used to cut off the seat belt when the user can not

unfasten the seat belt in time.

Although the conventional windows-breaking emergency escape device described above can be used to break car windows during the emergency, there is still much room in aspect of its structure for improvement. First, for
5 convenience, most of time the conventional windows-breaking emergency escape device is installed on the left hand side of the driver's seat, so, when the emergency happened, the driver will use his left hand to grab the device and use it to break the left hand window of the car. However, in nature, the
10 left hand of human is weaker and the operation of left hand to break the left hand window is awkward. And, for nowadays, more and more car drivers are female, the situation is even worse when the driver is female. Another problem is the cutter attached on the device, it is easy to hurt the user when using it during such emergency.

In order to overcome the drawbacks described above, the
15 windows-breaking emergency escape device of the present invention is provided, which not only much improves the drawbacks of a conventional windows-breaking emergency escape device but also provide many other advantages.

20 Summary of the Invention

The first objective of the present invention is to provide a windows-breaking emergency escape device that has a main body, a hammer and a supplementary power apparatus, wherein the hammer and the
25 supplementary power apparatus are installed on the main body, the user can either hold the main body to break the car window with the hammer by user himself or utilize the power supplying by the supplementary power apparatus to drive the hammer to break the car window.

The second objective of the present invention is to provide a
30 windows-breaking emergency escape device that has a groove disposed on the main body of the device, the width of the groove is smaller than that of a child's finger, which can hold the cutter in a safe manner and prevent the user being wounded due to carelessness.

The third objective of the present invention is to provide a

windows-breaking emergency escape device that has an emergency lighting apparatus that can provide lighting and positioning function in an emergency situation.

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Brief Description of the Drawings

The objects, spirits and advantages of the preferred embodiments of the present invention will be readily understood by the accompanying drawings and detailed descriptions, wherein:

10 FIG. 1 is a diagram showing a conventional windows-breaking emergency escape device.

FIG. 2 is a diagram of the perspective-disassembled view of the windows-breaking emergency escape device of the present invention.

15 FIG. 3 is a diagram of the perspective-assembled view of the windows-breaking emergency escape device of the present invention.

FIG. 4 is a diagram of the sectional view of the windows-breaking emergency escape device of the present invention.

20 FIG. 5A is a diagram of the sectional view of the windows-breaking emergency escape device of the present invention when the supplementary strength is reserved.

FIG. 5B is a diagram of the sectional view of the windows-breaking emergency escape device of the present invention when the supplementary strength is released.

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Detailed Description of the Present Invention

Hereinafter, several preferred will be used to depict the detailed structures, motion patterns, efficiency and other characteristics of the present invention.

30 Please referring to FIG. 2, FIG. 3 and FIG. 4, which are diagrams of the perspective-disassembled view, perspective-assembled view and sectional

view of the windows-breaking emergency escape device of the present invention. As seen in these diagrams, the windows-breaking emergency escape device of the present invention comprises a main body 1, a hammer 2 and a supplementary power apparatus 3, wherein the hammer 2 and the supplementary power apparatus 3 are installed on the main body 1, the front end of the hammer 2 extrudes from the surface of the main body 1, the improvement comprising that the supplementary power apparatus 3 further comprises a handler 31, an elastic component 32, a buckling component 33 and a release button 34, wherein a groove 11 is disposed on the main body 1 for receiving the hammer, the elastic component 33 is disposed between the hammer 2 and the groove 11 for providing a force to push the hammer outward. A circle rim 21 is disposed on the hammer 2, and the handler 31 is pivoted on the main body 1. One end of the handler 31 extends to form an extruding portion 311 that contacts against the rim 21 on the hammer 2. The handler 31 is disposed near the extruding portion 311, and when the user is moving the handler 31, the hammer 2 will be pushed inward to press the elastic component 3. The buckling component 33 is pivoted and fixed firmly on the main body 1, one end of the buckling component 33 contacts against the release button 34, another end of the buckling component 33 extrudes and extends into the groove 11 that is containing the hammer 2. When the hammer 2 is pushed by the extruding portion 311 of the handler 31 to move backward and to push the elastic components 32 to a certain position, the hammer 2 will be held by the buckling component 33, and the device enters into a strength-reserved stage (as shown in FIG. 5A).

Please referring to FIG. 5A and 5B now, which are showing two different stages of the device of the present invention. As described before, when an accident happened, if the user is a male, he can just hold the device of the present invention to break the car window. However, if the user is a female, she can pull the handler 31 first to move the extruding portion 311 of the handler 31 to push the hammer 2 inward to push against the elastic component 32. When the hammer 2 reaches to a certain position, the buckling component 33 will hold the hammer 2, and because of the elastic component 32, a strength moving the hammer 2 outward is reserved (as shown in FIG. 5A). The user then can aim the device of the present invention to the car window at proper place, and push the release button 34 to release the strength reserved by the elastic component 32 on the hammer

2, the hammer 2 will be released and project extremely fast to hit and break the car window.

Furthermore, a cutter groove 12 is disposed on the main body 1 and a cutter 4 is installed inside the cutter groove 12, the cutter will cut down an object being put inside the cutter groove 12 properly. The width of the groove is smaller than that of a child's finger, so the groove is small enough to prevent the user from being wounded due to careless. The user can use the cutter 4 to cut the belt when an accident happened and in a critical situation the user is not able to unfasten the safety belt properly.

In addition, a lighting apparatus 13 is disposed on the main body 1 for providing the lighting and positioning function in an emergency situation. With proper design, the lighting apparatus 13 can flash the light in a certain pattern, such as a SOS mode.

Moreover, a hole 312 is disposed on the handler 31 to hold different kind of screwdriver 5 to provide service when necessary. And a fix base 6 is included in the device of the present invention to fix the device at the proper place in a car.

As to the lighting apparatus 13 of the present invention described previously, it can be incorporated with the fix base 6. A penetrating hole 131 is disposed on the case of the lighting apparatus 13 near to the power outlet and a protruding portion 61 is disposed on the corresponding place on the fix base 6 so that the protruding portion 61 can engage into the penetrating hole 131 to power off the lighting apparatus 13. When an emergency happens and the user removes the device of the present invention from the fix base 6, the protruding portion 61 will disengage from the penetrating hole 131 and the lighting apparatus 13 will be powered on and lighted on automatically.

In addition to the lighting apparatus 13, a loud-sounding alarm can be installed with the device of the present invention to make loud sound when necessary to draw attention for rescue.

Although this invention has been disclosed and illustrated with reference to particular embodiments, however, the aforementioned description is just several preferable embodiments according to the invention and, of course, can not limit the range of the invention, so any equivalent variation and modification made according to the claims claimed

by this invention are all still belonged to the field covered by the patent of the present invention. Please your esteemed members of reviewing committee examine the present application in clear way and grant it as a formal patent as favorably as possible.